

REMARKS

These remarks, submitted in reply to the Office Action dated February 19, 2004 are believed to be fully responsive to each point of rejection raised therein. Accordingly, favorable reconsideration on the merits is respectfully requested.

Claims 1-13 are pending in the present application. Claims 3-7, 12 and 13 have been objected to but would be allowed if rewritten in independent form. Claims 1 and 11 have been rejected under 35 U.S.C. § 102(e) as being anticipated by Cao (USP 6,337,755). Claims 2 and 8-10 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Cao in view of Ransjin (USP 6,347,128). Applicant submits the following in traversal of the rejections.

Rejection of claims 1 and 11 under § 102(e) as being anticipated by Cao

The Examiner asserts, in response to Applicant's argument that claim 1 describes a single reference clock and that Cao shows a reference clock for each channel, that the specification is not the measure of the invention. However, Applicant respectfully submits that claim 1 recites a regenerator for a wavelength division multiplex transmission system which comprising a clock distribution unit comprising *a reference clock*. Therefore, applicant's already-submitted arguments were based on the express limitations of claim 1, and not grounded only in the specification, as alleged by the examiner. The claim requires a single reference clock for the wavelength division multiplex transmission system.

Therefore, Cao suffers from a deficiency which an exemplary embodiment of the present invention is meant to cure. In particular, Cao shows a regenerator in which each channel has its own reference clock (24 and 28). Therefore, Cao demonstrates a solution similar to the prior art (see

page 1, lines 21-31 of the specification) which is bulky, costly and has a high power consumption because of the number of electronic circuits to be replicated for clock recovery.

Furthermore, Cao does not disclose the clock distribution unit, modulation clock and reference clock of claim 1. Claim 1 recites a plurality of optical modulators each adapted to receive signals from the demultiplexer **and** a modulation clock from a clock distribution unit.

The Examiner asserts that clock recovery circuit 24 discloses the clock distribution unit of claim 1. However, there is no indication of a modulation clock in clock recovery circuit 24.

The Examiner asserts that drive voltage circuit 28 drives the modulator and is a clock signal and is therefore a modulation clock. Assuming the output of the drive voltage circuit is a modulation clock, the output is from the drive voltage circuit 28. The drive voltage circuit 28 is not the clock distribution unit (clock recovery circuit 24) as cited by the Examiner. Therefore, assuming a modulation clock is taught, the modulation clock is not from the clock distribution unit.

Furthermore, there is no indication that the plurality of optical modulators receive signals from the demultiplexer **and** a modulation clock of the clock distribution unit. It appears that each optical modulator has its own clock distribution unit (clock recovery circuit 24). Therefore, the plurality of optical modulators do not receive signals from the demultiplexer and a modulation clock of the clock distribution unit.

Moreover, as previously indicated, means for synchronizing the phase of a copy of the reference clock with the signals applied to the modulator is not disclosed in Cao. In particular, a control recovery circuit 24 is provided for each modulator. Since the clock recovery circuit generates a reference clock, as indicated by the Examiner, each modulator has a control recovery circuit

generating a reference clock. Therefore, the phase of *a copy* of the reference clock is not synchronized with the signals applied for each modulator.

For the above reasons, claim 1 and its dependent claims should be deemed patentable.

***Rejection of claims 2 and 8-10 under § 103(a) as being
unpatentable over Cao in view of Ransjin***

Claim 2 recites that the phase synchronization *means comprises a phase-locked loop for each modulator*. Assuming Cao teaches a phase synchronization means, there is no indication that the phase synchronization means comprises a phase-locked loop for each modulator. Therefore, the Examiner cites Ransjin to cure the deficiency.

As previously indicated, Cao does not teach means for synchronizing the phase of a copy of the reference clock with the signal applied to the modular, and Ransjin does not cure the deficiency.

Assuming Ransjin discloses a phase-locked loop, there is no indication that there is a phase-locked loop for each modulator, as recited in claim 2.

Furthermore, Cao appears to disclose a means for phase-synchronization which does not include the use of a phase-locked loop. Therefore, the Examiner's reasoning to modify Cao to include a phase-locked loop for phase synchronization is a result of hindsight. In particular, Cao appears to teach a means for phase synchronization without the use of a phase-locked loop. Therefore, claim 2 and its dependent claims should be deemed patentable.

Claim 10

Claim 10 recites that a clock recovery circuit supplies a control signal for the oscillator. The Examiner concedes Cao does not teach these elements and cites Ransjin to cure the deficiency. The Examiner cites PD(t) of Ransjin for teaching a control signal for the oscillator. PD(t) of Ransjin

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teaches a phase detector output. A phase detector output is not a control signal as recited in claim 1.

Therefore, claim 10 should be deemed patentable.

Applicant has added claim 14 to provide a more varied scope of protection. Claim 14 is a variation of claim 1. Since claim 14 recites elements similar to claim 1, claim 14 should be deemed patentable for the same reasons.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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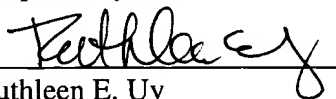
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